

8737_000010.ST25
SEQUENCE LISTING

<110> The University of Hong Kong
Ng, Hon Mun

<120> Novel HEV Antigenic Peptide and Methods

<130> 8737-000010

<140> US 10/089,292
<141> 2002-08-28

<150> PCT/IB00/01393
<151> 2000-09-28

<150> CA 2,283,538
<151> 1999-09-30

<160> 18

<170> PatentIn version 3.3

<210> 1
<211> 642
<212> DNA
<213> Hepatitis E virus

<220>
<221> CDS
<222> (1)..(642)

<400> 1	
cag ctg ttc tac tct cgt ccc gtc gtc tca gcc aat ggc gag ccg act	48
Gln Leu Phe Tyr Ser Arg Pro Val Val Ser Ala Asn Gly Glu Pro Thr	
1 5 10 15	
ggt aag ctt tat aca tct gta gag aat gct cag cag gat aag ggt att	96
Val Lys Leu Tyr Thr Ser Val Glu Asn Ala Gln Gln Asp Lys Gly Ile	
20 25 30	
gca atc ccg cat gac atc gac ctc ggg gag tct cgt gta gtt att cag	144
Ala Ile Pro His Asp Ile Asp Leu Gly Glu Ser Arg Val Val Ile Gln	
35 40 45	
gat tat gac aac caa cat gag cag gac cga ccg aca cct tcc cca gcc	192
Asp Tyr Asp Asn Gln His Glu Gln Asp Arg Pro Thr Pro Ser Pro Ala	
50 55 60	
cca tcg cgc cct ttt tct gtc ctc cga gct aat gat gtg ctt tgg ctt	240
Pro Ser Arg Pro Phe Ser Val Leu Arg Ala Asn Asp Val Leu Trp Leu	
65 70 75 80	
tct ctc acc gct gcc gag tat gac cag tcc act tac ggc tct tcg acc	288
Ser Leu Thr Ala Ala Glu Tyr Asp Gln Ser Thr Tyr Gly Ser Ser Thr	
85 90 95	
ggc cca gtc tat gtc tct gac tct gtg acc ttg gtt aat gtt gcg acc	336
Gly Pro Val Tyr Val Ser Asp Ser Val Thr Leu Val Asn Val Ala Thr	
100 105 110	
ggc gcg cag gcc gtt gcc cgg tca ctc gac tgg acc aag gtc aca ctt	384
Gly Ala Gln Ala Val Ala Arg Ser Leu Asp Trp Thr Lys Val Thr Leu	

8737_000010.ST25

115

120

125

gat ggt cgc ccc ctt tcc acc atc cag cag tat tca aag acc ttc ttt 432
 Asp Gly Arg Pro Leu Ser Thr Ile Gln Gln Tyr Ser Lys Thr Phe Phe
 130 135 140

gtc ctg ccg ctc cgc ggt aag ctc tcc ttt tgg gag gca ggt act act 480
 Val Leu Pro Leu Arg Gly Lys Leu Ser Phe Trp Glu Ala Gly Thr Thr
 145 150 155 160

aaa gcc ggg tac cct tat aat tat aac acc act gct agt gac caa ctg 528
 Lys Ala Gly Tyr Pro Tyr Asn Tyr Asn Thr Thr Ala Ser Asp Gln Leu
 165 170 175

ctc gtt gag aat gcc gct ggg cat cgg gtt gct att tcc act tac acc 576
 Leu Val Glu Asn Ala Ala Gly His Arg Val Ala Ile Ser Thr Tyr Thr
 180 185 190

act agc ctg ggt gct ggt ccc gtc tct att tcc gcg gtt gct gtt tta 624
 Thr Ser Leu Gly Ala Gly Pro Val Ser Ile Ser Ala Val Ala Val Leu
 195 200 205

gcc ccc cct ccg cgc tag 642
 Ala Pro Pro Pro Arg
 210

<210> 2
 <211> 213
 <212> PRT
 <213> Hepatitis E virus

<400> 2

Gln Leu Phe Tyr Ser Arg Pro Val Val Ser Ala Asn Gly Glu Pro Thr
 1 5 10 15

Val Lys Leu Tyr Thr Ser Val Glu Asn Ala Gln Gln Asp Lys Gly Ile
 20 25 30

Ala Ile Pro His Asp Ile Asp Leu Gly Glu Ser Arg Val Val Ile Gln
 35 40 45

Asp Tyr Asp Asn Gln His Glu Gln Asp Arg Pro Thr Pro Ser Pro Ala
 50 55 60

Pro Ser Arg Pro Phe Ser Val Leu Arg Ala Asn Asp Val Leu Trp Leu
 65 70 75 80

Ser Leu Thr Ala Ala Glu Tyr Asp Gln Ser Thr Tyr Gly Ser Ser Thr
 85 90 95

Gly Pro Val Tyr Val Ser Asp Ser Val Thr Leu Val Asn Val Ala Thr
 100 105 110

Gly Ala Gln Ala Val Ala Arg Ser Leu Asp Trp Thr Lys Val Thr Leu

115

120

125

Asp Gly Arg Pro Leu Ser Thr Ile Gln Gln Tyr Ser Lys Thr Phe Phe
 130 135 140

Val Leu Pro Leu Arg Gly Lys Leu Ser Phe Trp Glu Ala Gly Thr Thr
 145 150 155 160

Lys Ala Gly Tyr Pro Tyr Asn Tyr Asn Thr Thr Ala Ser Asp Gln Leu
 165 170 175

Leu Val Glu Asn Ala Ala Gly His Arg Val Ala Ile Ser Thr Tyr Thr
 180 185 190

Thr Ser Leu Gly Ala Gly Pro Val Ser Ile Ser Ala Val Ala Val Leu
 195 200 205

Ala Pro Pro Pro Arg
 210

<210> 3
 <211> 34
 <212> DNA
 <213> Artificial

<220>
 <223> Cloning Primer ORF2Rb

<400> 3
 ggccaatccc tagcgcgag ggggggctaa aaca

34

<210> 4
 <211> 2054
 <212> DNA
 <213> Hepatitis E virus

<400> 4
 atgcgccctc ggcctatattt gctgttgctc ctcatgtttc tgcctatgct gcccgcgcca 60
 ccgcccgggtc agccgtctgg ccgccgtcgt gggcgggcgca gcggcggttc cggcggtggt 120
 ttctgggggtg accgggttga ttctcagccc ttcgcaatcc cctatattca tccaaccaac 180
 cccttcgccc ccgatgtcac cgctgcggcc ggggctggac ctctgtttcg ccaaccgccc 240
 cgaccactcg gctccgcttg gcgtgaccag gccagcgcc ccgccgttgc ctcacgtcgt 300
 agacctacca cagctggggc cgcgccgcta accgcggtcg ctccggccca tgacaccccg 360
 ccagtgcctg atgttgactc ccgcggcgcc atcctgcgcc ggcagtataa cctatcaaca 420
 tctcccctta cttcttccgt ggccaccggt acaaacttgg ttctatacgc cgctcctctt 480
 agcccacttc taccctcca ggacggcacc aatactcata taatggccac agaagcttct 540

8737_000010.ST25

aattatgccc agtaccgggt tgctcgtgcc acaattcgct accgcccgct ggtccccaac	600
gctgttggtg gctacgccat ctccatctcg ttctggccac agaccaccac caccgccagc	660
tccgttgaca tgaattcaat aacctcgacg gatgttcgta ttttagtcca gcccggcata	720
gcctccgagc ttgttatccc aagtgagcgc gtacactacc gtaaccaagg ttggcgctct	780
gttgagacct ccgggggtggc ggaggaggag gccacctctg gtcttggttat gctctgcata	840
catggctcac ctgtaaattc ttataactaat acaccttata ccggtgccct cgggctggtg	900
gactttgccc tcgaacttga gttccgcaac ctacccccg gtaataccaa cacgcgggtc	960
tcccgttact ccagcactgc ccgtcaccgc cttcgtcgcg gtgcagatgg gactgccgag	1020
cttaccacca cggctgctac ccgcttcacg aaggacctct attttactag tactaatggt	1080
gtcggtgaga tcggccgtgg gatagcgctt accctgttta accttgctga caccctgctt	1140
ggcggctctac cgacagaatt gatttcgtcg gctgggtggc agctgttcta ctctcgctcc	1200
gtcgtctcag ccaatggcga gccgactggt aagctttata catctgtaga gaatgctcag	1260
caggataagg gtattgcaat cccgcatgac atcgacctcg gggagtctcg tgtagttatt	1320
caggattatg acaaccaaca tgagcaggac cgaccgacac cttccccagc cccatcgcg	1380
cctttttctg tcctccgagc taatgatgtg ctttggcttt ctctcaccgc tgccgagtat	1440
gaccagtcca cttacggctc ttcgaccggc ccagtctatg tctctgactc tgtgaccttg	1500
gttaatgttg cgaccggcg	1560
cctgatggtc gcccccttc caccatcaag cagtattcaa agaccttctt tgtcctgccg	1620
ctccgcggta agctctcctt ttgggaggca ggtactacta aagccgggta cccttataat	1680
tataacacca ctgctagtga ccaactgctc gttgagaatg ccgctgggca tcgggttgct	1740
atttccactt acaccactag cctgggtgct ggtcccgtct ctatttccgc ggttgctggt	1800
ttagcccccc actccgcgct agcattgctt gaggatacca tggactacct tgcccgcgcc	1860
catactttcg atgacttctg cccggagtgc cggccccttg gcctccaggg ctgtgctttt	1920
cagtctactg tcgctgagct tcagcgcctt aagatgaagg tgggtaaaac tcgggagtta	1980
tagtttattt gcttgtgccc cccttctttc tgttgcttat ttctcttttc tgcgttccgc	2040
gctccctgaa aaaa	2054

<210> 5
 <211> 370
 <212> DNA
 <213> Hepatitis E virus

<400> 5	
tgaataacat gtcttttgct gcgcccattg gttcgcgacc atgcgccctc ggcctatttt	60
gctgttgctc ctcatgtttc tgcctatgct gcccgcgcca ccgcccggtc agccgtctgg	120

8737_000010.ST25

```

ccgccgtcgt gggcggcgca gcggcggttc cggcggtggt ttctggggtg accggggtga      180
ttctcagccc ttcgcaatcc cctatatcca tccaaccaac cccttcgccc cgatgtcacc      240
gctgcggccg gggctggacc tcgtgttcgc caaccgccc gaccactcgg ctccgcttgg      300
cgtgaccagg ccagcgccc cgccgttgcc tcacgtcgta gacctaccac agctggggcc      360
gcgccgctaa                                     370

```

```

<210> 6
<211> 114
<212> DNA
<213> Hepatitis E virus

```

```

<220>
<221> CDS
<222> (1)..(114)

```

```

<400> 6
gac ctc gtg ttc gcc aac ccg ccc gac cac tcg gct ccg ctt ggc gtg      48
Asp Leu Val Phe Ala Asn Pro Pro Asp His Ser Ala Pro Leu Gly Val
1          5          10          15

acc agg ccc agc gcc ccg ccg ttg cct cac gtc gta gac cta cca cag      96
Thr Arg Pro Ser Ala Pro Pro Leu Pro His Val Val Asp Leu Pro Gln
          20          25          30

ctg ggg ccg cgc cgc taa                                     114
Leu Gly Pro Arg Arg
          35

```

```

<210> 7
<211> 37
<212> PRT
<213> Hepatitis E virus

```

```

<400> 7
Asp Leu Val Phe Ala Asn Pro Pro Asp His Ser Ala Pro Leu Gly Val
1          5          10          15

Thr Arg Pro Ser Ala Pro Pro Leu Pro His Val Val Asp Leu Pro Gln
          20          25          30

Leu Gly Pro Arg Arg
          35

```

```

<210> 8
<211> 22
<212> DNA
<213> Artificial

```

```

<220>
<223> RT Primer E3R
<400> 8

```

8737_000010.ST25

cggggagtca acatcaggca ct 22

<210> 9
 <211> 24
 <212> DNA
 <213> Artificial

<220>
 <223> RT Primer E5R

<400> 9
 aagcaaataa actataactc ccga 24

<210> 10
 <211> 34
 <212> DNA
 <213> Artificial

<220>
 <223> Cloning Primer ORF2F

<400> 10
 gctggatccc agctgttcta ctctcgtccc gtcg 34

<210> 11
 <211> 30
 <212> DNA
 <213> Artificial

<220>
 <223> Cloning Primer ORF2Ra

<400> 11
 ggcgaattcc aaataaacta taactcccga 30

<210> 12
 <211> 30
 <212> DNA
 <213> Artificial

<220>
 <223> Cloning Primer ORF3F

<400> 12
 ccgggatccg acctcgtgtt cgccaacccg 30

<210> 13
 <211> 31
 <212> DNA
 <213> Artificial

<220>
 <223> Cloning Primer ORF3R

<400> 13
 caggaattcc ttagcggcgc ggccccagct g 31

8737_000010.ST25

<210> 14
 <211> 21
 <212> DNA
 <213> Artificial

<220>
 <223> PCR Primer A3R

<400> 14
 ggctcaccgg agtgtttctt c

21

<210> 15
 <211> 22
 <212> DNA
 <213> Artificial

<220>
 <223> PCR Primer A5F

<400> 15
 ctttgatgac accgtcttct cg

22

<210> 16
 <211> 22
 <212> DNA
 <213> Artificial

<220>
 <223> PCR Primer B3R

<400> 16
 gtgtttcttc caaaaccctc gc

22

<210> 17
 <211> 21
 <212> DNA
 <213> Artificial

<220>
 <223> PCR Primer B5F

<400> 17
 gccgcagcaa aggcattcat g

21

<210> 18
 <211> 213
 <212> PRT
 <213> Hepatitis E virus

<400> 18

Gln Leu Phe Tyr Ser Arg Pro Val Val Ser Ala Asn Gly Glu Pro Thr
 1 5 10 15

Val Lys Leu Tyr Thr Ser Val Glu Asn Ala Gln Gln Asp Lys Gly Ile
 20 25 30

8737_000010.ST25

Ala Ile Pro His Asp Ile Asp Leu Gly Glu Ser Arg Val Val Ile Gln
 35 40 45

Asp Tyr Asp Asn Gln His Glu Gln Asp Arg Pro Thr Pro Ser Pro Ala
 50 55 60

Pro Ser Arg Pro Phe Ser Val Leu Arg Ala Asn Asp Val Leu Trp Leu
 65 70 75 80

Ser Leu Thr Ala Ala Glu Tyr Asp Gln Ser Thr Tyr Gly Ser Ser Thr
 85 90 95

Gly Pro Val Tyr Val Ser Asp Ser Val Thr Leu Val Asn Val Ala Thr
 100 105 110

Gly Ala Gln Ala Val Ala Arg Ser Leu Asp Trp Thr Lys Val Thr Leu
 115 120 125

Asp Gly Arg Pro Leu Ser Thr Ile Gln Gln Tyr Ser Lys Thr Phe Phe
 130 135 140

Val Leu Pro Leu Arg Gly Lys Leu Ser Phe Trp Glu Ala Gly Thr Thr
 145 150 155 160

Lys Ala Gly Tyr Pro Tyr Asn Tyr Asn Thr Thr Ala Ser Asp Gln Leu
 165 170 175

Leu Val Glu Asn Ala Ala Gly His Arg Val Ala Ile Ser Thr Tyr Thr
 180 185 190

Thr Ser Leu Gly Ala Gly Pro Val Ser Ile Ser Ala Val Ala Val Leu
 195 200 205

Ala Pro Pro Pro Arg
 210